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Community Based Research by Applying Chemistry

Claire M. McDonnell

Dublin Institute of Technology, claire.mcdonnell@tudublin.ie

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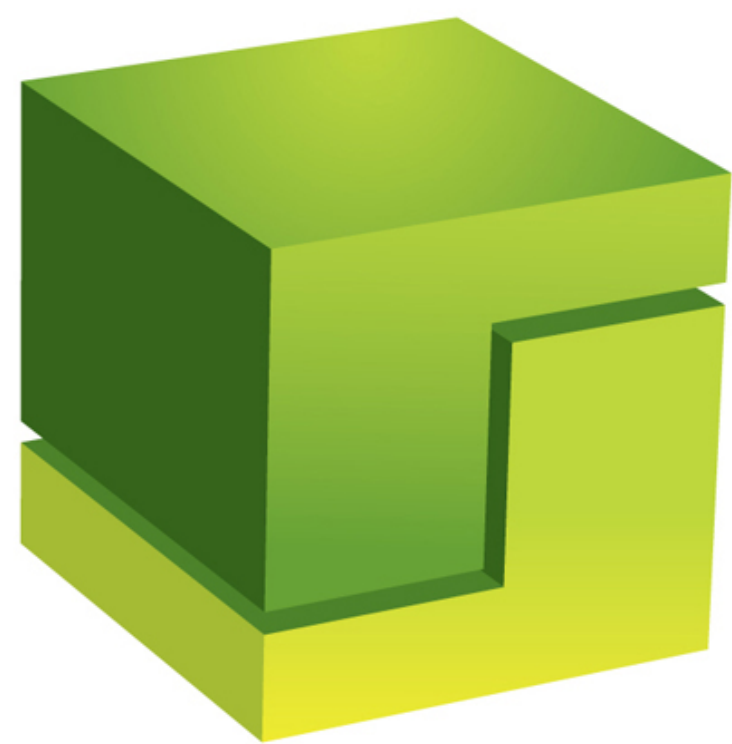
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students learning with communities

Community Based Research by Applying Chemistry



Students Learning with Communities



(Image sourced from <http://desireland.ie/sitric-garden/>)



Road Safety Awareness - Breath & Urine Testing for Alcohol & Development of Roadside Drug Testing Methods

Final year students on the BSc in Forensic & Environmental Chemistry determined alcohol concentrations in breath & urine samples provided anonymously by their peers. The purpose is to raise awareness of road safety as part of the DIT College Awareness of Road Safety (CARS) initiative. A breath test survey was also carried out with students the morning after a Rag Week event using breathalysers provided by the **Garda Road Safety Unit**. In 2017, a student raised awareness of the rollout of roadside drug testing by creating a video and also worked on the detection of components of cannabis in oral fluids. (Staff involved: Dr Cora O'Donnell, Dr Vanessa Murphy, Dr John Fox & Dr Claire Mc Donnell)

Long-term Study of Soil Quality for a Community Garden & Grangegorman Site

This project examines soil quality indicators & typical soil contaminants over a period of time for the arable portion of the DIT Grangegorman site and adjacent community gardens. A preliminary study by two students on the BSc in Medicinal Chemistry & Pharmaceutical Sciences in February 2010 established baseline levels of heavy metals & polyaromatic hydrocarbons (PAHs). Levels in the community garden, as expected, were higher than those found on the Grangegorman site as the community garden soil is regularly disturbed while the Grangegorman soil has lain undisturbed.

(Staff involved: Dr Barry Foley, Prof John Cassidy & Dr. Claire McDonnell)

Further Reading – Our Journal Article

C. McDonnell, P. Ennis, L. Shoemaker, (2011) "Now for the science bit: implementing community-based learning in chemistry", Education + Training, 53 (2/3), 218 – 236, at <http://arrow.dit.ie/scschcpsart/28/>

Student Placements with Wells for Zoe Charity in Malawi

In 2012, two students from Year 3 of the BSc in Forensic & Environmental Chemistry spent 6 weeks in Malawi with the Wells for Zoe charity. They worked with second level science teachers and tested local water & soil quality as well as helping to manufacture water pumps. The students continued their placement in DIT and performed further soil analysis and developed chemistry lab teaching and learning activities suitable for use with limited resources. (Staff involved: Dr Claire Mc Donnell, Prof John Cassidy & Mr Ciarán O'Leary)



Development of a liquid soap product from waste food carrier oils with the Lifeline Project

In 2017, work began on this project to develop a method to convert waste oils into household cleaning products.

Why Get Involved in SLWC Projects?

Students can work in a real life environment, see how their discipline knowledge is applied and learn from their community partners. DIT staff get to work for the benefit of the community as part of their job & invariably find these assignments more rewarding, interesting & enjoyable than traditional approaches.

For further Information, contact claire.mcdonnell@dit.ie

Further Reading – Book Chapter

C. McDonnell (2015) Innovative Community-Engaged Learning Projects: From Chemical Reactions to Community Interactions, chapter in Chemistry Education : Best Practices, Opportunities and Trends, J. García-Martínez and E. Serrano-Torregrosa (Eds), Wiley-VCH Verlag GmbH & Co.

